



MULTI-PRODUCT DIAGNOSTICS TECHNICAL PROCEDURES

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Multi-Product Diagnostics Technical Procedures

Section 1

Apple II Peripherals Diskette

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Introduction

The Apple II Peripherals Diskette contains a series of functional tests for the Apple II monitors and printers and a diagnostic test for the Apple II Memory Expansion Card.

The tests may be run on any of the following computers: Apple II, II Plus, IIe, and IIc. You may also run the tests on the Apple /// if, prior to installing the Peripherals Diskette, you boot the Apple II Emulation program.

Exceptions:

1. The Memory Expansion Card test cannot be run on the ///.
2. The Dot Matrix Printer test cannot be run on the IIc.
3. The Silentype test cannot be run on the IIc or ///.

This section contains instructions for running the monitor and printer tests of the Peripherals Diskette. Instructions for the use of the Memory Expansion Card test are found in the Memory Expansion Card section of the **Apple IIe Technical Procedures**.

Use of the Peripherals Diskette is very simple. For the functional tests, the user observes the results of the test (the output on the screen or printer paper) and decides for himself if the device is functioning properly. For specific information on an acceptable level of functioning for the device (and its repair or adjustment) see the appropriate Technical Procedures.

Materials Needed

Apple II Peripherals Diskette
Apple II, II Plus, IIe, or IIc computer
Monitor

Printer to be tested (optional):

- ImageWriter
- ImageWriter 15
- ImageWriter II
- Daisy Wheel Printer
- Dot Matrix Printer
- Scribe
- Silentype



Main Menu

Set up the selected computer, monitor, and printer (optional). Install the Apple II Peripherals Diskette into the computer's disk drive and turn on the computer and the peripheral(s). The main menu will appear:

1. Monitors
2. Printers
3. Apple II Memory Expansion Card

Type the number of the test classification you want. If you press <ESC> you will exit the program.

Monitor Tests

When you select the monitor tests from the main menu, six test pattern options (plus "Test All") will appear. Type the number of the test pattern you wish to view. If you are a first-time user of the diskette, it is handy to use "Test All" first so that you can view all the test pattern options. Each pattern will remain on the screen until you do one of the following:

- Press the spacebar (for "Accept," or "Pass")
- Type "X" (for "Reject," or "Fail")
- Press <ESC> (to return to the monitor menu)

NOTE: On individual tests, you are returned to the monitor menu after you indicate a "Pass" or "Fail." (If you selected "Test All", the next test pattern will be displayed automatically.)

The results of the testing are indicated on the monitor menu.

The judging of test results is purely subjective.

The Pass/Fail selection is provided so that you may keep track of the results of each test as you go along.



The Monitor Test options are as follows:

0. Test All - Displays all six monitor tests in sequence below.
1. Dot Pattern - Shows a 20x28 column dot pattern crossed by two diagonal lines (corner to corner).

This test can be used to indicate whether yoke and ring alignment are correct.
2. Grid Pattern - Shows a grid of 11 vertical lines intersected by 11 horizontal lines.

This test can be used to indicate correct yoke and ring alignment.
3. 40-Column Display - Shows text display of 23 lines of 40 characters each.

This test can be used to test character generation and vertical and horizontal size.
4. 80-Column Display - Shows text display of 23 lines of 80 characters each.

This test can also be used to test character generation and vertical and horizontal size. **This test is accessible only if there is an 80-column card installed.**
5. Color Bars - Shows vertical color bars with the name of each color below.

This test can be used to adjust the color of color monitors. (The test pattern colors do not show on monochrome monitors, of course.)
6. Full White Screen - Shows a full white screen.

This test can be used to check for white balance (a color adjustment).



Printer Tests

Before you begin, make sure the printer you wish to test is properly configured for the computer you are using (that is, make sure the dip switch settings are the same for both interface and printer). **If you are using a IIe or II Plus, note the slot in which the interface card is installed.**

NOTE: If you are using an Apple ///, you must first boot the Apple II Emulation program, press <ESCAPE> to go into "Options," and set the baud rate to match the printer dip switch settings. (For the Dot Matrix Printer, select the parallel communications option). Then insert the Peripherals Diskette and press <RETURN> to boot.

When you select the printer tests from the main menu, seven Apple II compatible printers are listed for you to choose from:

1. ImageWriter
2. ImageWriter 15
3. ImageWriter II
4. Dot Matrix Printer
5. Daisy Wheel Printer
6. Scribe
7. Silentype

Enter the number of the printer you wish to test. Depending on the computer you are using, one of the following will occur:

Apple IIc - Slot 1 (printer port) will automatically be assigned at 9600 baud.

Apple /// - With all serial printers, slot 5 (RS-232 port) will automatically be assigned and the selected printer menu will appear. When using the Apple /// to test the Dot Matrix Printer (parallel), the interface card must be installed in slot 4. Then slot 4 will automatically be assigned and the DMP menu will appear.

Apple II Plus or IIe - You will be prompted to enter the slot number where the interface is installed. If you select the wrong slot number (without pressing <RETURN>), press <ESC> and start over. If you type in the wrong slot number and press <RETURN>, you must reboot by turning the computer off and on (or wait while the program finishes the test sequence).



When the printer's menu screen appears, it will list the tests available for that printer. (The table at the end of this section shows the tests available for each printer.)

Enter the number of the test you want. The name of the test selected will head the printout, followed by the pattern of characters the test displays. (**NOTE:** When testing a printer with an Apple /// under Emulation mode, the printer carriage may bounce to the extreme right before beginning the test printout. Ignore this reaction.)

The printer functional test performs each of the available tests in sequence. The character set test and custom characters test run continuously until you do one of the following:

- Press the spacebar** (for "Accept," or "Pass")
- Type "X"** (for "Reject," or "Fail")
- Press <ESC>** (to return to the printer menu)

The remaining tests print a number of lines (usually five) as a sample, then give you the additional option below:

- Press <RETURN>** (to repeat test)

NOTE: After you indicate a "Pass" or "Fail" the printer menu returns automatically, except in the printer functional test, where each test prints sequentially until all are completed.

The results (Pass, Fail) you give the printer for each test are indicated on the printer menu.



The Printer Test options are as follows:

- | | |
|-------------------|--|
| Functional Test | - Performs a prescribed number of iterations (usually five) of each test available for the printer being tested. |
| Character Set | - Continuously prints the full set of characters, with underlining.

This test is used to check character generation. |
| Alternate Sets | - Prints one each of all alternate character sets available.

This test checks the printer's interpretation of the logic board commands for alternate character sets. |
| Custom Characters | - Continuously prints any customer-designed characters.

This test checks the circuitry used for downloading a custom character and the ability of the printer to print the character when called. |
| Graphic Images | - Prints 5 horizontal lines - very narrow to very wide. (On the DWP, this test prints text and overcast X's in graphic mode. On the Silentyte, this test produces a picture.)

This test checks the ability of the printer to interpret graphic commands sent to it. |

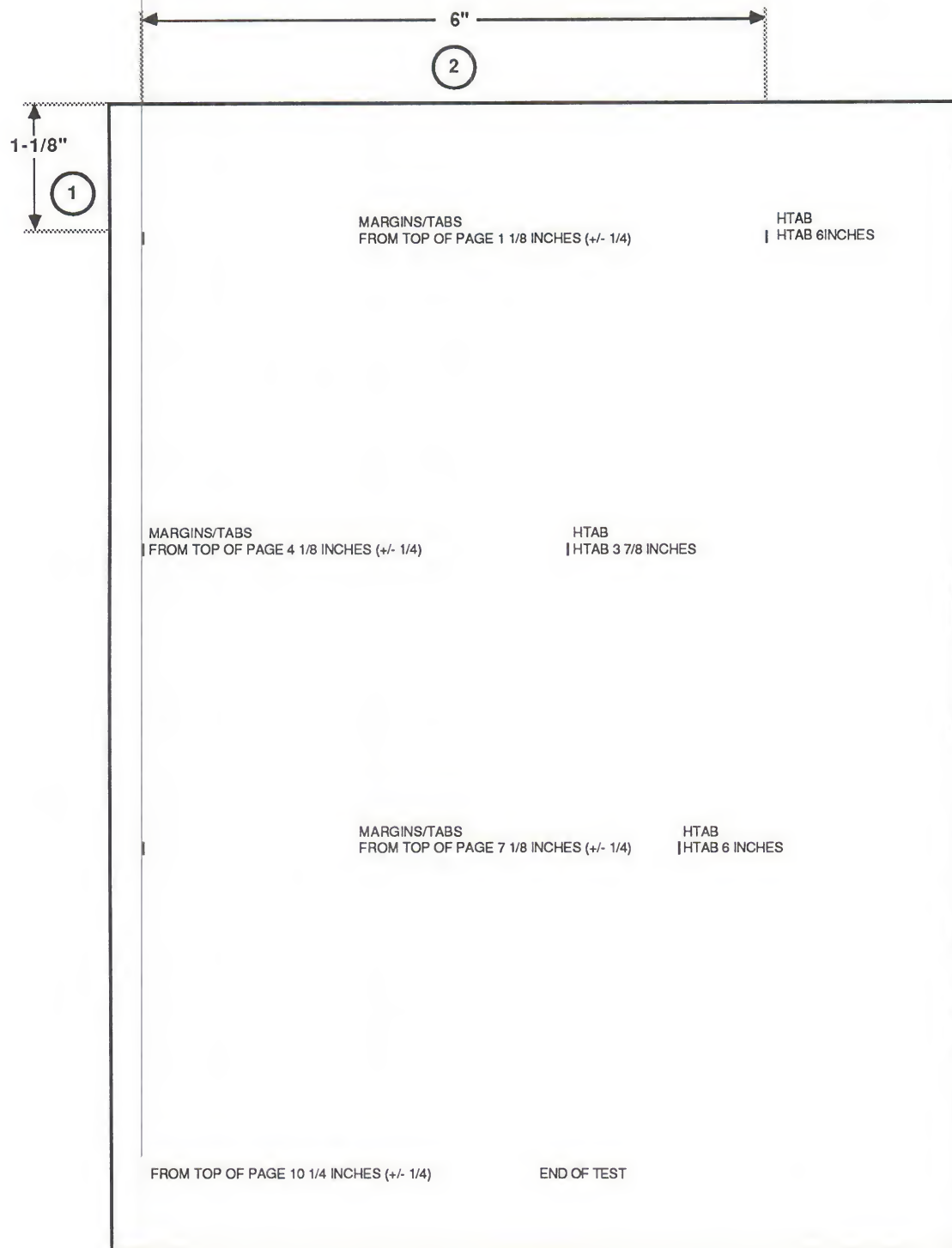


FIGURE 1



Margin/Tabs

- Prints lines and tabs with measurements given for verification, as in the example at left (Figure 1), which shows the test printout from ImageWriter II.

Before the test begins, you are given a chance to align paper in the printer. Press <RETURN> when you are ready to begin.

If paper is aligned in the printer correctly, the distance from the top of the page to the interspace between the first two printed lines (Figure 1, #1) and the distance between tab lines (Figure 1, #2) should be as indicated on the printout, give or take the acceptable variance. **The measurements given will vary from printer to printer.**

Registration

- Prints rows of underlined bar lines (|||||). On the Silentyper, the test prints rows of H's (HHHHHHHHHHHHHHHHHH).

This test allows you to check the vertical and horizontal alignment (firing hammer adjustment). Run this test several times before making any repairs on the printer.



Color Test

- (ImageWriter II and Scribe only)

ImageWriter II - Prints five lines each of the full character set in the following colors: yellow, purple, red, green, blue, orange, and black.

Scribe - Prints five lines each of the full character set in three colors: yellow, blue, and red.

This test allows you to test the printer's interpretation of the color commands from the computer's logic board and to test the mechanical operation of the color ribbon and the adjustment of the color cam.

Print Intensity

- (Silentype only)

Prints one line of each intensity setting from 0 to 7.

This test checks the printer's mechanical components and the interpretation of the intensity settings.

Mouse Text

- (ImageWriter II only)

Prints five lines of mouse text characters.

This test checks printer's ability to interpret and print mouse text characters when called.



Table of Printer Tests

Name of Test	IW	IW-15	IW-II	DMP	DWP	Scribe	Silent
Functional Test	x	x ¹	x	x	x ²	x	x
Character Set	x	x	x	x	x	x	x
Alternate Sets	x	x	x	x	x	x	
Custom Characters	x	x	x	x			
Graphic Images	x	x	x	x	x ³	x	x ⁴
Margin/Tabs	x	x	x	x	x ⁵	x	
Registration	x	x	x	x	x	x	x
Color Test			x			x ⁶	
Print Intensity							x
Mouse Text			x				

NOTES

1. The tests of the ImageWriter 15 print to 15 inches.
2. Use a Courier 10-pitch daisywheel for the DWP tests.
3. On the Daisy Wheel Printer, the Graphic Image is composed of text and a line of overcast X's done in graphics mode.
5. On the Silentype, the Graphic Image is a picture.
6. On the Scribe, you will be prompted to insert the color ribbon just before the color test, and instructed to remove it and replace the black ribbon after the color test is completed.

